APPENDIX B

1. - 21. (Previously cancelled).

22. (Currently amended) A method of processing iron-laden spent sulfuric acid or iron-laden sulfuric acid materials obtained therefrom, comprising the steps of reacting the spent sulfuric acid or sulfuric acid material with a material that contains iron chloride, and optionally other metal chlorides, whereby iron(II) sulfate is obtained, characterized in that the concentration of iron ions in the iron-laden spent sulfuric acid or in the iron-laden sulfuric acid material obtained therefrom is in the range of 2 to 22 weight %.
23. (Previously presented) The method according to Claim 22, characterized in that hydrochloric acid is generated in the reaction of the iron-laden spent sulfuric acid or iron-laden spent sulfuric acid material, and the metal chlorides, and the hydrochloric acid is separated from the reaction mixture in gaseous form or in the form of aqueous hydrochloric acid, and then utilized.
24. (Previously presented) The method according to Claim 22, characterized in that the spent sulfuric acid derives from titanium dioxide production using the sulfate process.
25. (Previously presented) The method according to Claim 22, characterized in that the spent sulfuric acid derives from the smelting of copper, lead or zinc.
26. (Previously presented) The method according to Claim 22, characterized in that the spent sulfuric acid is a byproduct of an organic synthesis.
27. (Previously presented) The method according to Claim 22, characterized in that the spent sulfuric acid is pickling solution.
28. (Previously presented) The method according to Claim 22, wherein the spent sulfuric acid has an H_2SO_4 content of from 10 to 90 weight %.
29. (Previously presented) The method according to Claim 22, wherein the spent sulfuric acid has an H_2SO_4 content of 20 to 30 weight %.
30. (Previously presented) The method according to Claim 22, characterized in that the iron chloride-containing material is in the form of a hydrochloric acid solution.
31. (Previously presented) The method according to Claim 22, characterized in that the iron chloride-containing material contains 10 to 30 weight % iron ions.

32. (Cancelled) The method according to Claim 22, characterized in that the concentration of iron ions in the iron-laden spent sulfuric acid or in the iron-laden sulfuric acid material obtained therefrom is in the range of 2 to 22 weight %.

33. (Previously presented) The method according to Claim 22, characterized in that the iron chloride-containing material is selected from the group consisting of a pickling solution and products resulting from the processing of a pickling solution.

34. (Previously presented) The method according to Claim 22, characterized in that the iron chloride-containing material is obtained by concentrating a pickling solution.

35. (Previously presented) The method according to Claim 22, characterized in that the iron chloride-containing material derives from the production of titanium dioxide using the chloride process.

36. (Previously presented) The method according to Claim 35, characterized in that the iron chloride-containing material contains the iron-containing metal chlorides that are separated after the chlorination.

37. (Previously presented) The method according to Claim 22, characterized in that the iron chloride-containing material comprises the Cl-containing residues that are generated during the production of synthetic rutile from titanium- and iron-containing raw materials.

38. (Previously presented) The method according to Claim 22, characterized in that either the iron chloride-containing material or the iron sulfate containing material is reduced in acidity prior to being reacted, or the product of the reaction is reduced in acidity, by adding metallic iron or iron oxides, or both, thereby increasing the iron concentration.

39. (Previously presented) The method according to Claim 22, characterized in that the metal sulfates, other than iron sulfate, that remain in the solution after crystallization of the iron sulfate are carried off for separate utilization or disposal.

40. (Previously presented) The method according to Claim 39, characterized in that the metal sulfates, other than iron sulfate, are neutralized with Ca compounds.

41. (Currently amended) The method according to Claim 22, characterized in that the iron sulfate-containing spent sulfuric acid or the iron-laden sulphuric acid materials ~~products with iron chloride-containing materials~~ obtained therefrom are transported from the place at which they were generated, through a pipe, to the place of the reaction with the iron chloride-containing material takes place.

42. (Previously presented) The method according to Claim 22, characterized in that the concentration of iron ions in the spent sulfuric acid is 2 to 5 weight %.

43. (New) A method of Claim 42, characterized in that the spent sulfuric acid derives from titanium dioxide production using the sulfate process.

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